

## **A RAND NOTE**

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**Long-Term Economic and Military Trends,  
1950-2010**

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## PREFACE

This Note presents estimates of certain key economic and military trends for 15 countries for the period 1950–2010 and explains the method, assumptions, and data used in making the estimates. The analysis was developed as an input to the report of the Future Security Environment Working Group for the Commission on Integrated Long-Term Strategy.

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## SUMMARY

In this study, prepared for the Future Security Environment Working Group of the Commission on Integrated Long-Term Strategy, certain global economic and military trends are estimated for the period from 1950 through 2010. These trends are summarized for 15 countries in terms of three major indicators: gross national product (GNP), annual military spending, and accumulation of military capital stocks. The 15 countries are the United States, the Soviet Union, Japan, China, West Germany, the United Kingdom, France, India, South Korea, Taiwan, Turkey, Egypt, Brazil, Argentina, and Mexico. These countries currently produce more than two-thirds of the global product. The time series estimates for each of the three indicators are intended to be internally consistent over time and among the 15 countries. Clearly, this aim can, at best, be only roughly approximated because of fundamental limitations associated with both the data and the estimation methods.

## METHOD

The method applied in making the estimates uses an aggregate national production function for each of the 15 countries, in which the inputs are capital, labor, and factor productivity and the output is the estimated GNP. Estimates of military spending and the military capital stock for each country are derived by several additional steps and calculations superimposed on the GNP time series. This Note contains estimates of the three sets of trends for each sample country for 1950–2010. In general, dollar conversions have been made from estimates originally calculated in local currencies by using a purchasing-power parity rate rather than an official foreign exchange rate.

## GNP TRENDS

Although the calculations are subject to many uncertainties and should only be treated as rough approximations—even for the past (1950–1987) let alone for the future (1988–2010)—the analysis suggests several salient points:

1. By 2010, the Soviet Union will probably have the fourth largest GNP, following that of the United States, Japan, and China. Our base-case estimates for the Soviet Union imply an annual growth rate in the 1990–2010 period of 1.6 percent.
2. By 2010, the Chinese GNP may well exceed that of the Soviet Union by over 20 percent, whereas in 1980, China's GNP was about 40 percent that of the Soviet Union.
3. Because the Soviet Union's economic prospects are especially uncertain, several alternative estimates have been made, based on differing assumptions about the effects of *perestroika*, as well as about the initial (1985) level of the Soviet GNP. The resulting estimates for the Soviet Union cover an extremely wide range, from more than 62 percent above the base-case GNP estimate for 2010 (4.7 trillion 1986 U.S. dollars at the upper end, compared with 2.9 trillion in our base-case estimate) to 28 percent below the base-case estimate (2.1 trillion 1986 U.S. dollars).
4. By 2010, the combined national products of the East Asian countries in the sample (Japan, China, South Korea, and Taiwan) will exceed the GNP of the United States (8.5 trillion 1986 U.S. dollars versus 7.9 trillion for the United States). These estimates imply annual growth rates over the 1990–2010 period of 2.8 percent for Japan, 4.7 percent for China, 4.9 percent for Korea, 5.8 percent for Taiwan, and 2.6 percent for the United States.
5. The combined national products of these same East Asian countries will, by 2010, exceed the combined national products of West Germany, the United Kingdom, and France by more than 120 percent, compared with an excess of less than 20 percent in 1980. The implied annual growth rates for West Germany, France, and the United Kingdom during the 1990–2010 period are 2.1 percent, 2.6 percent, and 1.8 percent, respectively.
6. Several middle-level regional powers are likely to grow significantly relative to the rest of the world. For example, in 1980 the combined national products of India, Korea, Taiwan, Turkey, Brazil, Argentina, and Mexico were about 70 percent as large as the GNPs of West Germany, France, and the United Kingdom. By 2010 the same seven regional powers will probably have combined GNPs nearly 20 percent larger than those of the same three West European countries.

7. For the period from the late 1960s through 2010 the U.S. share of the global product remains remarkably stable—between 22 percent and 23 percent—representing between 29 percent and 34 percent of the combined GNPs of the 15 countries included in our sample.
8. Although the estimates for Mexico and Egypt show positive rates of growth, they are so low in relation to expected population growth that these countries would probably experience extremely high rates of unemployment (over 40 percent), perhaps resulting in serious risks to political and social stability.

### **TRENDS IN MILITARY SPENDING**

Military spending estimates confront additional uncertainties besides those already noted in connection with the GNP estimates. As a reflection of these uncertainties, the U.S. military spending estimates have been based on three different assumptions: military spending as a constant (6.2 percent) share of GNP; military spending as a constant (1988) U.S. dollar level from 1988–2010; and military spending growing at a slow rate of 1 percent per annum between 1988 and 2010. Four different sets of estimates are made for military spending in the Soviet Union, reflecting major uncertainties that apply in that case also. Depending upon which pairing of these U.S. and Soviet alternatives one compares, U.S. military spending by the first decade of the 21st century may vary from one-third above that of the Soviet Union to less than half of it.

With respect to the military spending of other countries, two points are worth noting:

1. Our estimates of future military spending by China in constant 1986 U.S. dollars, if and as China realizes its planned military modernization, are about half those for the U.S. and Soviet base cases, compared with the present estimate of less than a fifth of those.
2. Japan's defense spending, even if it remains a very small part of Japan's expanding GNP, will approach the spending levels of each of our principal West European allies. If Japan were to boost its share of GNP devoted to defense to, say, 3 percent by the first part of the 21st century, Japanese military spending would be nearly 70 percent of the combined military spending of the United Kingdom, West Germany, and France.

## **MILITARY CAPITAL STOCKS**

With respect to our estimates of military capital stocks (equipment plus construction less depreciation), the alternative assumptions we used for the U.S. and Soviet military spending estimates generate a considerable range of comparisons between the United States and the Soviet Union, though narrower than the military spending comparisons cited earlier. Thus, by 2010 the U.S. military capital stock may be as much as 20 percent greater than that of the Soviet Union, or as little as 30 percent below that of the Soviet Union.

With respect to other countries included in the sample:

1. China's military capital stock, hitherto small relative to that of the United States and the Soviet Union, may rise to roughly 40 percent of the stocks of each of the superpowers by 2010.
2. The accumulated military capital of the UK, Germany, and France remains in the future about as significant in the balance between the United States and the Soviet Union as it has in the past.
3. If Japan were to increase its military spending to, say, 3 percent of GNP in 1990, by 2010 the Japanese military capital stock would be about 24 percent above that of West Germany.
4. Although the military capital stocks of middle regional powers (such as Korea, Taiwan, Turkey, India, Brazil, and Egypt) are small relative to those of the larger powers, they will represent a formidable supply of weapons, very likely including advanced systems, during the rest of the century and in the beginning of the 21st century. Furthermore, these middle regional powers will acquire a growing capacity to produce and to export a wide range of weapons, including all but the most sophisticated types.

## **CONCLUSION**

In light of these forecasts of long-term economic and military trends, and recognizing the uncertainties surrounding them, a general conclusion emerges: the latter part of the present century and the early part of the 21st century will be characterized by a continuing shift of economic and military power toward the Pacific Rim countries. Consequently, it may well be that the orientation of Japan and China toward the United

States and each other—whether they are allied, friendly, neutral, or belligerent—will be no less important for U.S. interests than is the continued adversarial posture of the Soviet Union.

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## I. INTRODUCTION

The Commission on Integrated Long-Term Strategy (CILS) was established in October 1986 by the Secretary of Defense and the Special Assistant to the President for National Security Affairs. The Commission's purpose was to propose a defense strategy for the United States that would integrate the changing security environment, newly emerging technology, and resource constraints over the next two decades.

To assist the commission in its work and in its final report,<sup>1</sup> four Working Groups were formed dealing with the Future Security Environment, Offensive and Defensive Forces, Third-World Conflicts, and Technology.

The RAND study summarized in this Note was prepared for the Future Security Environment Working Group to provide a broad survey and estimation of certain global economic and military trends for the period from 1950 to 2010. These trends—covering economic growth, military spending, and military investment—are important influences on the international environment of the past, present, and future.

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<sup>1</sup>*Discriminate Deterrence*, The Report of the Commission on Integrated Long-Term Strategy, U.S. Government Printing Office, Washington, D.C., January 1988.

## II. TRENDS IN GROSS NATIONAL PRODUCTS

Trying to envisage the future of the U.S. economy alone is difficult and inevitably shrouded in uncertainty. When the angle of vision is widened to cover a large number of other countries as well, the difficulties and uncertainties are compounded. Recognizing these limitations, our aim in this section is to provide a broad-brush treatment of major changes that have occurred in the past several decades in the relative economic growth of 15 key countries, as well as the relative growth that seems to impend in the next two decades.

No single indicator suffices to convey the trend in an economy's behavior over time, still less to compare and size the performances of a large number of national economies with one another. Growth in real national product is clearly one salient indicator, but other ones are important and relevant, depending on the purposes for which the comparisons are made. Other relevant indicators include exports and imports, capital flows, per capita income, domestic capital formation, resource allocations for research and development and science and technology, international holdings of assets and liabilities, demographic changes, and so on.

Some of these other dimensions (e.g., per capita income, demographic changes, and technology comparisons) will be touched on later. Our initial evaluation focuses on gross national product for several reasons: first, we are interested in charting economic trends for 15 countries over a 60-year period, and hence, because the breadth is so wide, some narrowing of focus is necessary; second, GNP is probably the most useful single indicator of economic size for purposes of international comparisons over long periods; and third, our ability to forecast most of the other indicators mentioned above—which are themselves usually linked in some way to GNP—is even more limited than our ability to forecast GNPs.

The reason for making estimates for the entire 60-year period—for “backcasting” as well as “forecasting”—is to exhibit as clearly as possible the changes that impend in the global economic environment against the backdrop of current and past environments. This perspective was adopted because of its congruence with the purpose of the commission.

The methodology used in making the GNP estimates is summarized in the appendix to this Note. However, two points about the estimates are important to note: first, the growth rates reflected in the following estimates are *derived*<sup>1</sup> rather than assumed; second, the estimated GNP figures for the period 1987 to 2010 are intended to be consistent with the actual GNP figures for 1950–1986.

Nevertheless, despite these attributes, it would be misleading to attribute a high degree of accuracy to the estimates. Indeed, elements in the world economy that the method ignores are likely to be no less influential than the ones it includes. For example, how the international debt of more than \$1 trillion owed by the developing countries is managed—whether by a gradual marking down and easing of servicing terms, or by outright default, or by repatriation of capital in response to changes in internal economic policies, or by new lending that contributes to increased exports by the debtor countries and their enhanced servicing capacities—will have a serious impact on economic growth in some of the major developing countries, as well as in the creditor countries. Of still greater significance in affecting GNP growth would be a sharp or cumulative increase in protectionist trade policies by the world's major trading countries or blocs: the United States, Japan, and the European Economic Community (EEC).

To delineate the international economic landscape of the future, and to compare it with that of the past, GNP estimates, employing the same methodology, have been made for 15 countries: the United States, the Soviet Union, Japan, China (PRC), West Germany (FRG), the United Kingdom, France, India, South Korea (ROK), Taiwan, Brazil, Argentina, Turkey, Mexico, and Egypt. The list, although it omits numerous important countries, was chosen by the Future Security Environment Working Group as illustrative and indicative of some of the principal trends in the main regions most relevant to the commission's task. These countries currently produce over two-thirds of the global product, a proportion that probably will rise to more than three-quarters by the next century. They also include the major current and prospective world economic powers (United States, Japan, Soviet Union, West Germany, China), most of the major current or prospective regional economic powers (Korea, India, France, United Kingdom, Brazil, Argentina, Taiwan, and Turkey), and two potentially quite vulnerable economies (Mexico and Egypt). To the extent that the EEC acts as a unit, the bulk of its

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<sup>1</sup>That is, derived from data, assumptions, and judgments about rates of change in labor, capital, and technology inputs in each of the 15 countries.

formidable economic capabilities is already represented by the FRG, France, and the United Kingdom.

The results are summarized in Table 1 and in Figs. 1-3. Several points that are significant as indicators and sources of change in the future security environment can be inferred from the table and graphs:

1. By 2010 the Soviet Union will probably have the fourth largest gross national product, following those of the United States, Japan, and China; currently Soviet GNP is about the same as that of Japan. (See Fig. 1.) Also, by 2010, the Soviet national product will be about 26 percent less than the combined national product of West Germany, France, and the United Kingdom; currently, the Soviet economy is only slightly smaller than that of the three West European ones. These base-case Soviet estimates imply an average annual growth rate in the 1990-2010 period of 1.6 percent. Because the Soviet Union's economic prospects are particularly uncertain, as well as especially significant, several alternative estimates based on differing assumptions about the effects of *perestroika* are described below.

Table 1

GROSS NATIONAL PRODUCTS OF SELECTED COUNTRIES, 1950-2010  
(In billions of 1986 U.S. dollars)<sup>a</sup>

Nation	1950	1960	1970	1980	1990	2000	2010
United States	1378	1907	2767	3649	4682	6072	7859
Soviet Union	492	855	1411	1935	2088	2455	2873
Japan	189 <sup>b</sup>	336	936	1476	2127	2856	3714
China <sup>c</sup>	114	232	417	793	1520	2395	3791
West Germany	172	402	622	815	1009	1244	1525
United Kingdom	251	349	463	560	670	807	949
France	172	282	486	695	843	1109	1410
India	152	202	294	408	598	897	1330
South Korea <sup>c</sup>	18	27	67	147	274	455	709
Taiwan	5	11	25	57	103	180	317
Brazil	34	65	117	272	353	571	939
Argentina	38	51	78	106	107	119	133
Turkey <sup>c</sup>	32	59	104	171	256	367	501
Mexico	58	104	203	378	444	548	679
Egypt	16	31	49	98	132	158	190

<sup>a</sup>Converted from local currencies using purchasing-power parities of 1980.

<sup>b</sup>Japanese GNP estimate for 1953.

<sup>c</sup>Gross domestic product.

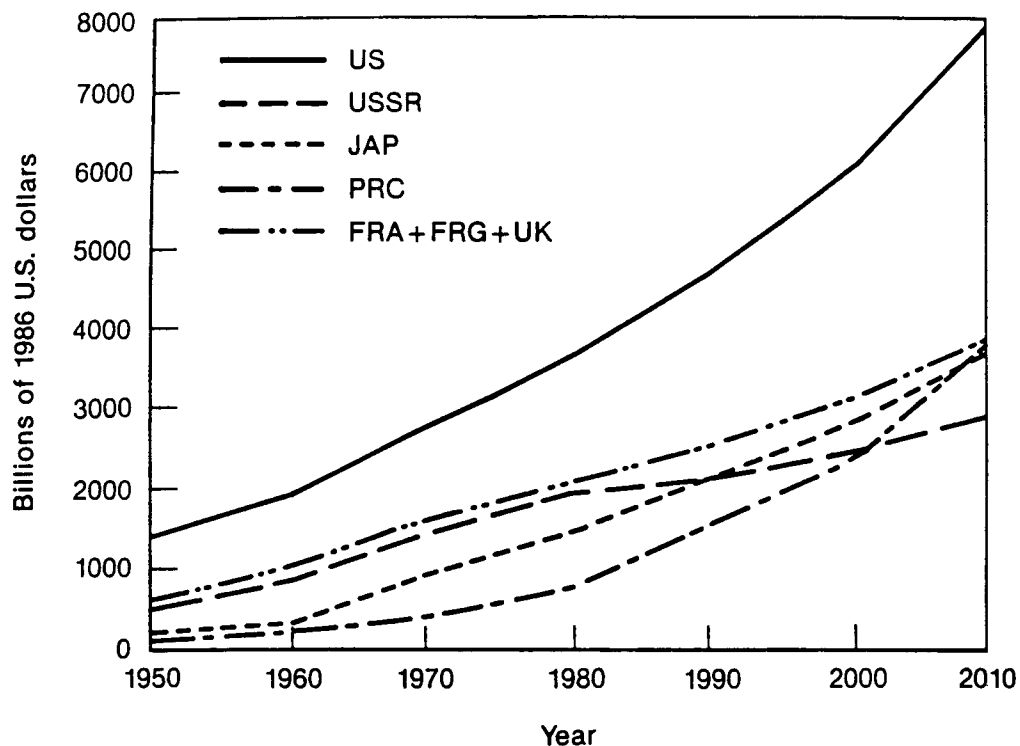


Fig. 1—Gross national products: United States, USSR, Japan, China, and three NATO countries

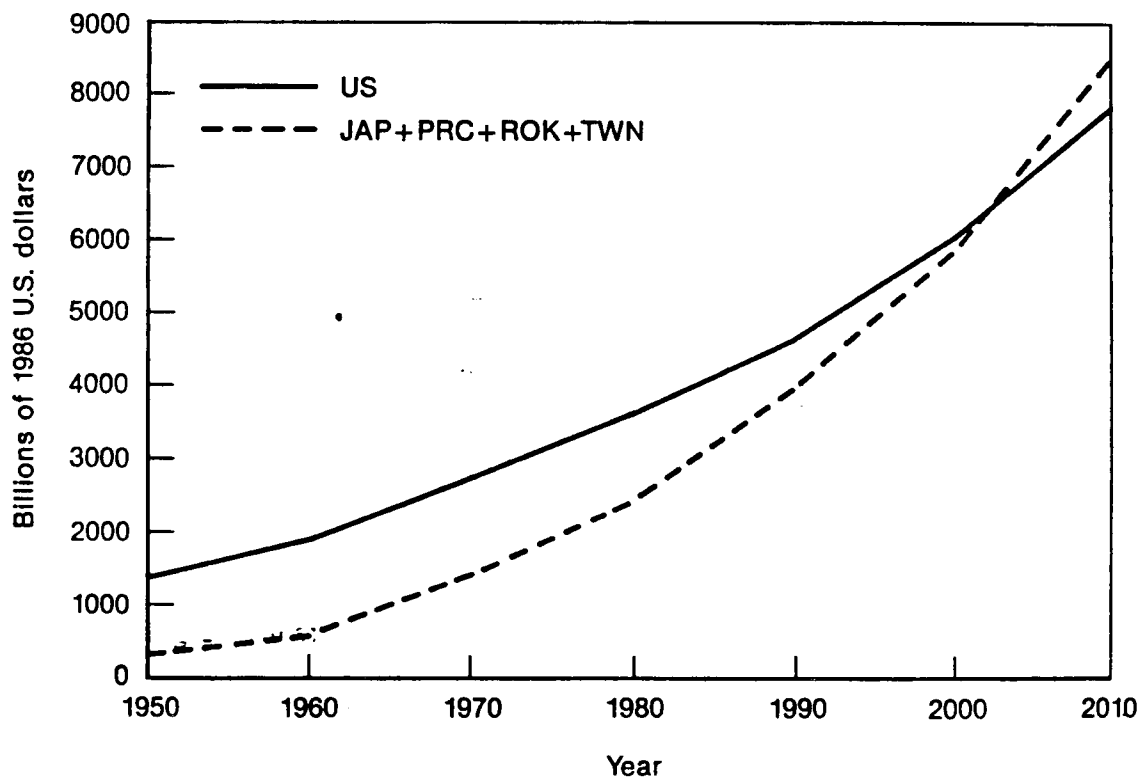


Fig. 2—Gross national products: United States and four Asian countries

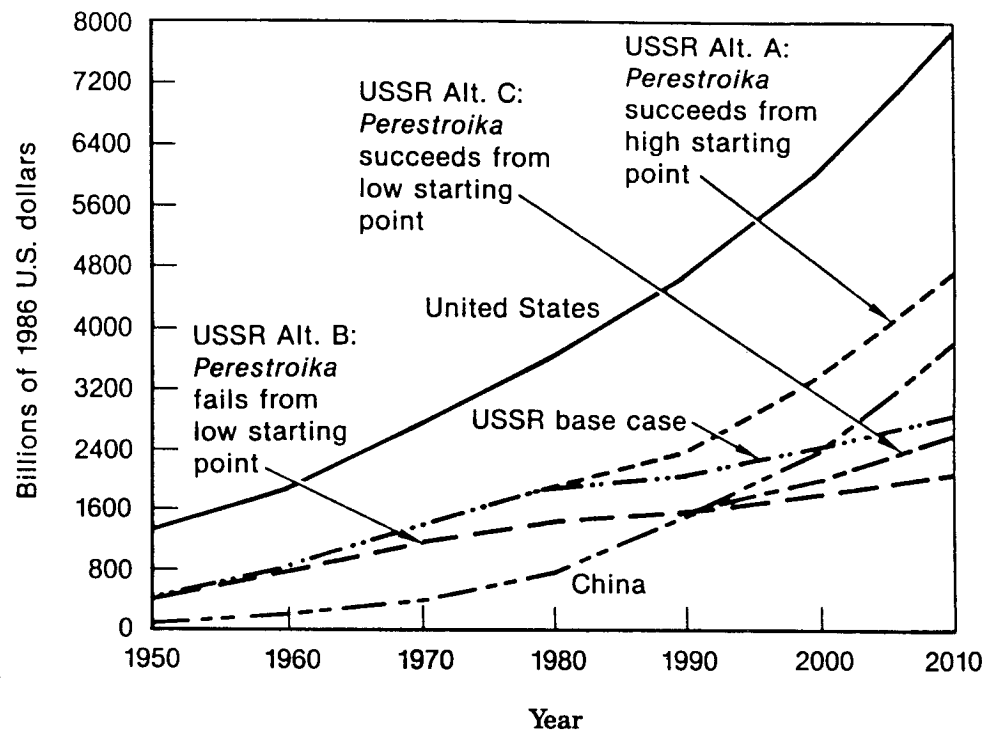


Fig. 3—Gross national products: United States, USSR, China

2. In 1980, China's national product was about 40 percent that of the Soviet Union; by 1990 the Chinese national product will probably be more than 70 percent that of the Soviet Union and by 2000 nearly equal to it; by 2010 the Chinese GNP will perhaps exceed that of the Soviet Union by over 20 percent.<sup>2</sup> (See Table 1 and Fig. 1.)
3. By 2010, the combined national products of the East Asian countries in the sample (Japan, China, South Korea, and Taiwan) will exceed the GNP of the United States (8.5 trillion 1986 U.S. dollars versus 7.9 trillion for the United States). (See Fig. 2.) These estimates imply that Japan's average annual growth rate over the 1990–2010 period will be about 2.8 percent, China's 4.7 percent, Korea's 4.9 percent, Taiwan's 5.8 percent, and that of the United States 2.6 percent.

<sup>2</sup>See "Uncertainties Concerning GNP Estimates for China" below for further explanation of these striking results.

4. The combined national products of these same East Asian economies will, by 2010, exceed the combined national products of West Germany, the UK, and France by more than 120 percent (8.5 trillion 1986 U.S. dollars versus 3.9 trillion); in 1980 their combined national products exceeded those of West Germany, France, and the UK by less than 20 percent (2.5 trillion 1986 U.S. dollars for the East Asian countries versus 2.1 trillion for the West European ones). (See Table 1.) The implied annual growth rates for West Germany, France, and the United Kingdom during the 1990–2010 period are 2.1 percent, 2.6 percent, and 1.8 percent, respectively.
5. The share represented by the U.S. GNP in the collective national products of the 15 countries in the sample remains remarkably stable from about the late 1960s through 2010. Recalling that the 15 countries' national products comprise between two-thirds and three-quarters of the global product, the U.S. share in the 15-country sample remains between 29 percent and 34 percent throughout 1970 to 2010, or between 22 percent and 23 percent of the global product.<sup>3</sup>
6. The middle regional powers are likely to grow significantly relative to the economies of Western Europe. For example, in 1980 the national products of India, Korea, Taiwan, Turkey, Brazil, Argentina, and Mexico were about 70 percent as large as the national products of West Germany, France, and the UK (1.4 trillion 1986 U.S. dollars compared with 2.1 trillion for the FRG, France, and the UK). (See Table 1.) By 2010, the same seven regional economic powers will probably have combined national products about 18 percent larger than those of the three West European economies (4.6 trillion 1986 U.S. dollars for the seven non-European countries versus 3.9 trillion for the European ones).
7. Although the estimates for Mexico and Egypt show positive rates of growth, the rates are low in relation to expected population and labor force growth (see subsequent discussion of demographic trends and per capita GNP). High rates of unemployment (over 40 percent) and stagnating per capita GNP may result, perhaps posing serious risks to political and social stability

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<sup>3</sup> Assuming that the 15 countries' share of the global product rises from two-thirds to three-quarters between 1970 and 2010.



in these countries and the adjacent regions. This unemployment expectation is incorporated in the analysis by assuming that the employed labor force probably will increase at annual rates of 1.4 percent and 1.8 percent for Egypt and Mexico, respectively, during 1987 to 2010, rates which are well below the probable increases in the working-age population.

Table 2 summarizes the GNP growth rates derived from the methodology described in the appendix and implicit in the GNP estimates of Table 1.

### ALTERNATIVE SOVIET GNP ESTIMATES

As noted above, perhaps the most significant uncertainties in the foregoing calculations concern the economic performance of the Soviet Union in response to the new rhetoric and policies associated with Gorbachev's reform efforts. To bound these uncertainties, three alternative Soviet GNP calculations have been constructed for the 1985-2010 period, based on the following assumptions:

*Alternative A:* High initial (1985) level of Soviet GNP, sharply increased (tripled) productivity growth, moderate military burden ("perestroika succeeds I").

Table 2

GROSS NATIONAL PRODUCT GROWTH RATES OF  
SELECTED COUNTRIES, 1950-2010  
(In percent)

Nation	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-10
United States	3.3	3.8	2.8	2.5	2.6	2.6
Soviet Union	5.7	5.1	3.2	0.8	1.6	1.6
Japan	5.9	10.8	4.7	3.7	3.0	2.7
China	7.4	6.0	6.6	6.7	4.7	4.7
West Germany	8.9	4.5	2.7	2.2	2.1	2.1
United Kingdom	3.4	2.9	1.9	1.8	1.9	1.6
France	5.1	5.6	3.6	1.9	2.8	2.4
India	2.9	3.8	3.3	3.9	4.1	4.0
South Korea	4.1	9.5	8.2	6.4	5.2	4.5
Taiwan	8.2	8.6	8.6	6.1	5.7	5.8
Brazil	6.7	6.1	8.8	2.6	4.9	5.1
Argentina	3.0	4.3	3.1	0.1	1.1	1.1
Turkey	6.3	5.8	5.1	4.1	3.7	3.2
Mexico	6.0	6.9	6.4	1.6	2.1	2.2
Egypt	6.8	4.7	7.2	3.0	1.8	1.9

*Alternative B:* Low initial (1985) level of Soviet GNP, productivity growth slow, high military burden ("*perestroika* fails").

*Alternative C:* Low initial level of Soviet GNP, sharply increased productivity growth, high military burden ("*perestroika* succeeds II").

The differing assumptions about the 1985 level of Soviet GNP derive from an unresolved controversy, both in the United States and in the Soviet Union, over the size of the Soviet GNP in 1980 and its real growth between then and 1985. Results of the alternative calculations are shown in Table 3 and Fig. 3, together with the prior base-case Soviet and U.S. estimates.

As Table 3 suggests, if Gorbachev's economic reforms succeed dramatically—a tripling of total factor productivity growth *throughout* the 1990–2010 period would be an extraordinary success—and if the level from which the Soviet economy "takes off" is high, the combined effects on Soviet GNP are substantial. The Soviet economy would remain the world's second largest, its ratio to that of the United States in 2010 would be 60 percent instead of less than 40 percent in the base case, and its military production base would probably be correspondingly larger.

#### UNCERTAINTIES CONCERNING GNP ESTIMATES FOR CHINA

The estimates for China also entail considerable uncertainty. The uncertainty arises both from the difficulty of establishing a dollar figure for China's current or recent

Table 3

ALTERNATIVE SOVIET GROSS NATIONAL  
PRODUCT SCENARIOS AND ESTIMATES,  
1985–2010  
(In billions of 1986 U.S. dollars)

Category	1985	1990	2000	2010
Soviet base case	1993	2088	2455	2873
Alt. A: <i>Perestroika</i> succeeds, I	2176	2398	3368	4697
Alt. B: <i>Perestroika</i> fails	1504	1564	1821	2119
Alt. C: <i>Perestroika</i> succeeds, II	1504	1601	2017	2613
U.S. base case	4105	4682	6072	7859

GNP and from deriving a reasonable estimate of its expected growth over the next two decades.

Expressing China's recent GNP in dollars depends on using an appropriate exchange rate; this is especially difficult because of the very different weights and structure of China's goods and services from those of the United States. The GNP estimate that results can vary as much as threefold. As previously noted, our estimate of China's recent GNP in dollars employs a purchasing-power parity rate, derived as described in the appendix to convert yuan to dollars. In principle, this rate reflects the relative value of yuan and dollars in purchasing the particular combination of goods and services produced in both countries. Our resulting estimate for China's recent GNP—about \$1.2 trillion in 1986 U.S. dollars—is much higher (and we believe it to be more reliable) than most other published estimates.

A crude impressionistic check is useful to confirm this conclusion. Thus, if (1) one acknowledges that the Chinese are generally living at least at subsistence levels of consumption (a judgment readily inferred from observations of living standards in China), (2) one acknowledges that something over 80 percent of the Chinese national product is devoted to consumption, and (3) one adopts U.S. dollar prices in converting this proportion to dollars, then a 1986 estimate for China's gross domestic product (GDP) per capita in the neighborhood of \$1,000 is entirely reasonable. Combining this figure with China's population estimates (by the Bureau of the Census and other sources), which vary between 1 billion and 1.15 billion, results in an estimate of China's gross domestic product remarkably close to our estimates. It is reassuring that the two estimates, developed by such different methods, produce such closely consistent results.

The second source of uncertainty relates to the method we have used to estimate China's aggregate growth through 2010. This method, described in the appendix, results in an estimated average annual growth rate of about 4.6 percent over the next two decades, considerably slower than China's recent record and well below the 6 to 7 percent envisaged by the Chinese themselves for the rest of this century. Of course, whether our estimate, let alone the still higher one of the Chinese, is actually realized will depend on many factors not directly included in our estimation model—especially the persistence and effectiveness of China's market-oriented reform efforts.

In any event, while our resulting estimates place China's GNP in 2010 roughly equal to Japan's (and second only to that of the United States), China's product *per capita* would remain far below that of the other major powers.

## PER CAPITA NATIONAL PRODUCTS

When the previous GNP estimates are combined with Bureau of Census estimates of demographic trends (Table 4), some striking differences emerge in per capita GNP.

- Although China's GNP in 2010 may well be the second or third largest in the world, its per capita GNP will be only 10–11 percent that of the United States and Japan, and about one-third that of the Soviet Union. (See Fig. 4.)
- The per capita GNP of Japan in 2010 will be as high or higher than that of the United States due in part to slow population growth in Japan. (See Fig. 4.)
- Per capita GNP in Korea and Taiwan will be about half that in the United States and Japan by 2010. (See Figs. 4 and 5.)
- Population growth in Mexico and Egypt at annual rates of about 2.0 percent and 1.9 percent, respectively, in the next two decades will probably approximate their corresponding GNP growth rates (2.1 percent and 1.8 percent, respectively). The result will probably be stagnation in per capita

Table 4

### 1985 POPULATIONS AND 1950–2010 POPULATION GROWTH RATES OF SELECTED COUNTRIES

Nation	1985 Population (Millions)	Growth Rate, 1950–1985 (Percent)	Growth Rate, 1985–2010 (Percent)
United States	238.0	1.28	0.74
Soviet Union	278.6	1.25	0.77
Japan	120.7	1.05	0.39
China	1059.5	1.87	0.99
West Germany	60.9	0.57	–0.25
United Kingdom	56.1	0.30	0.00
France	54.6	0.77	0.24
India	758.9	2.17	1.43
South Korea	41.3	2.04	1.22
Taiwan	19.1 <sup>a</sup>	n.a.	0.87 <sup>a</sup>
Brazil	135.6	2.70	1.72
Argentina	30.5	1.65	1.24
Turkey	49.3	2.50	1.75
Mexico	79.0	3.07	1.96
Egypt	46.9	2.41	1.91

SOURCE: United Nations, *World Population Prospects*, New York, 1986.

NOTE: n.a. means data were not available.

<sup>a</sup>1985 population derived from 1980 and 1990 populations of 17.8 and 20.5 million, respectively, and derived growth rate of 1.42 percent.

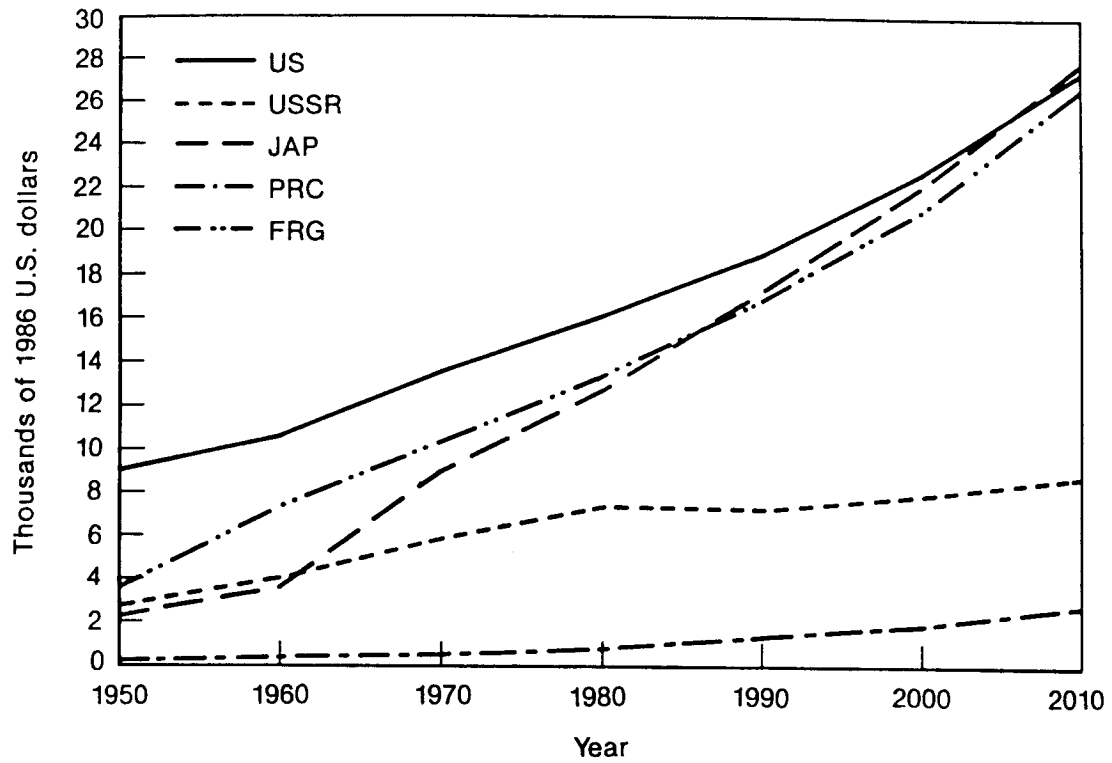


Fig. 4—Per capita gross national products: United States, USSR, Japan, China, and West Germany

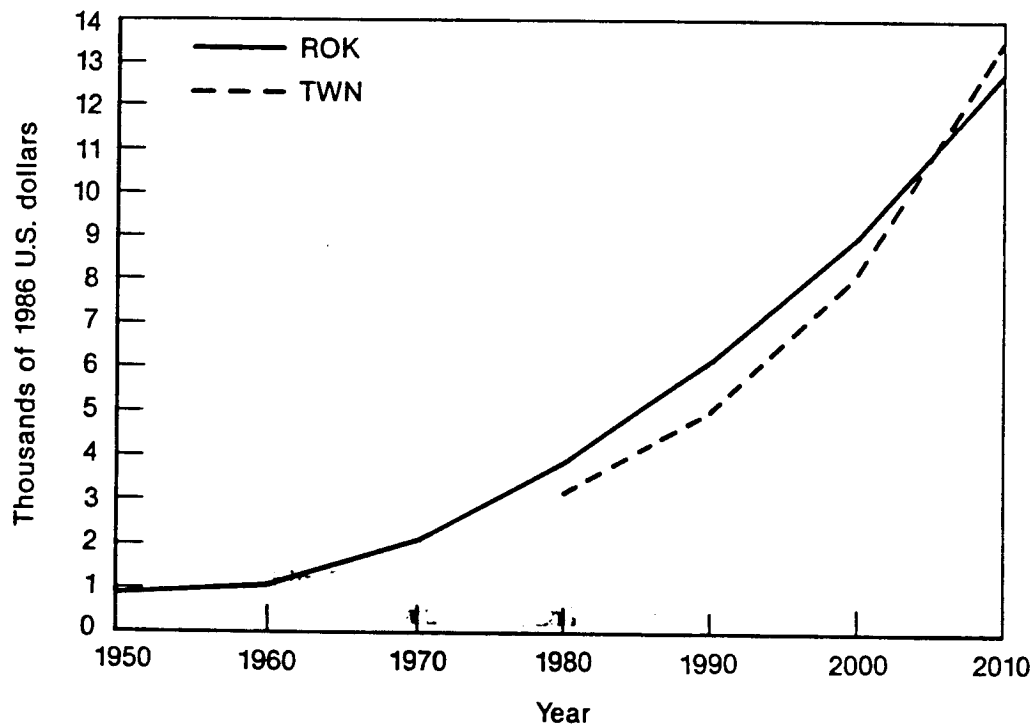


Fig. 5—Per capita gross national products: South Korea and Taiwan

GNP as well as high rates of unemployment (over 40 percent), because labor force growth exceeds employment growth. The consequent situation may pose serious risks to political and social stability in these countries. (See Fig. 6.)

### IMPLICATIONS OF GNP TRENDS

These calculations and the inferences drawn from them provide only a broad and general perspective. They do not measure all important economic trends of the next two decades. They do not address a number of salient economic indicators referred to earlier and a number of important countries. Nor do they treat such other important economic developments, bearing on the future security environment, as the control of military-related technology exports and U.S. dependence on imports for a perhaps growing proportion of military-related components.

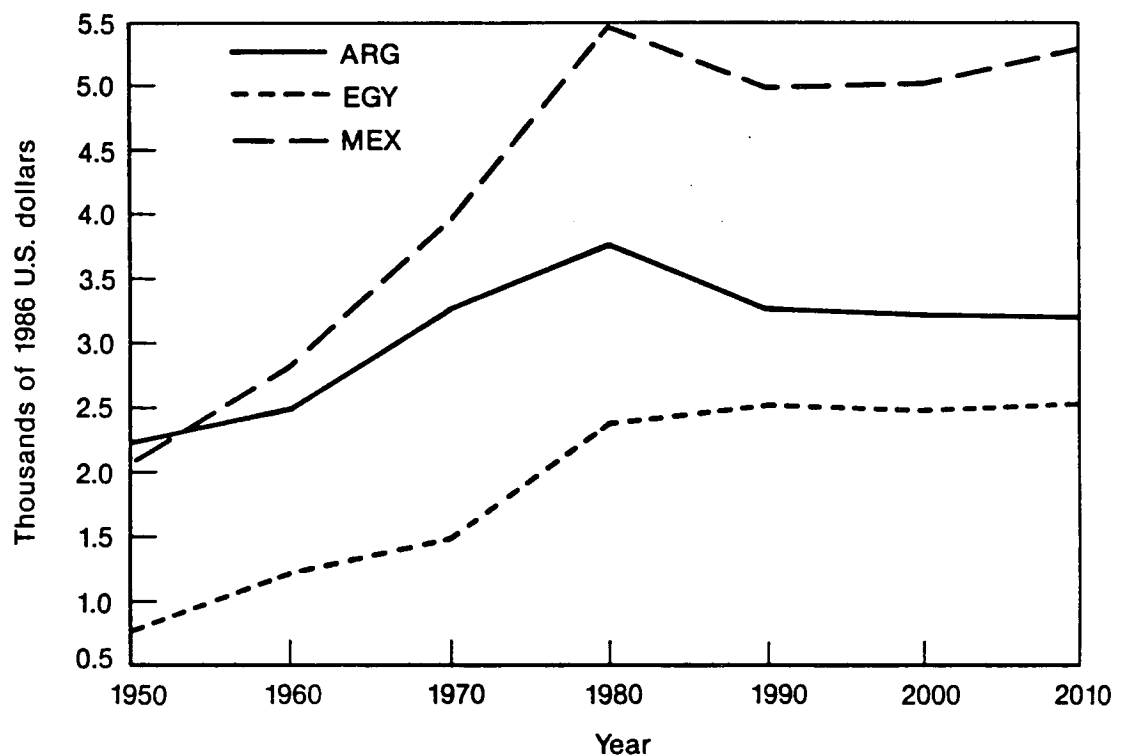


Fig. 6—Per capita gross national products: Argentina, Egypt, and Mexico

Despite these limitations, the trends shown in Table 1 suggest several striking and significant changes that impend in the economic environment:

- the center of activity in the global economy shifts to Asia and the Pacific Rim;
- non-European economic powers display economic growth and prominence relative to those of Western Europe;
- the share represented by the Soviet Union in the international economy will probably further diminish (although Gorbachev's policies create particular uncertainties for the base-case Soviet GNP estimates, as noted above);
- the share represented by the United States in the international economy remains remarkably stable over the same 20-year period in which the Soviet share will probably be diminishing.

These trends suggest that the international economic environment's broad contours will be undergoing gradual changes over the next two decades, with cumulative effects that will be dramatic. To be sure, the uncertainties attending these calculations are substantial. For example, the moderate growth rates implied over the 1987-2010 period for Japan (varying between 2.5 and 3.5 percent) and for the United States (varying between 2.3 and 2.7 percent) might turn out to be too high (or too low) or might be interrupted by cyclical recessions (or expansions). And, as noted earlier, some of the developing countries might experience acute political and social instability that would critically affect, as well as be critically affected by, their economic growth. While the future is inevitably uncertain, and there are bound to be surprises, the broad economic trends described above suggest that the economic environment emerging in the 1987-2010 period will be very different from that of the past two decades.